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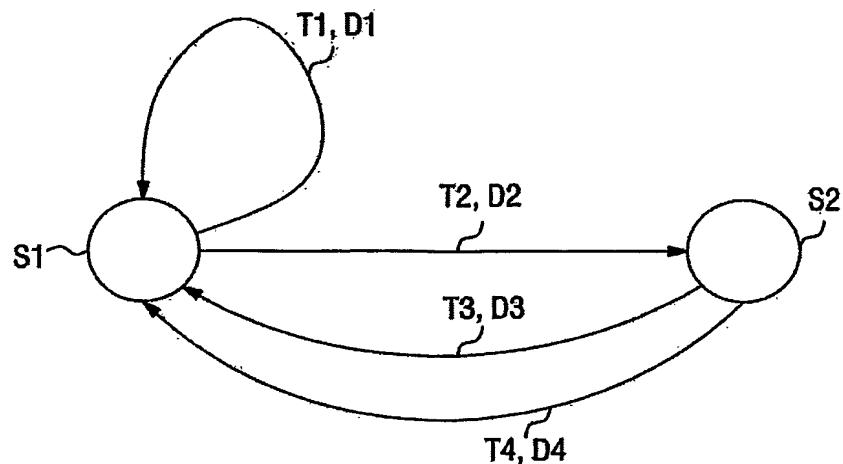


FIG.1
(Prior art)

$\text{AR} \rightarrow \text{<command>} = \text{<play>} | \text{<stop>} | \text{<goto>};$
 $\text{AR} \rightarrow \text{<play>} = (\text{play} | \text{go} | \text{start}) \{ \text{PLAY} \};$
 $\text{AR} \rightarrow \text{<stop>} = (\text{stop} | \text{halt} | \text{quit}) \{ \text{STOP} \};$
 $\text{KR} \rightarrow \text{<goto>} = \text{go to line } \text{<lineno>} \{ \text{GOTO} \};$
 $\text{AR} \rightarrow \text{<lineno>} = 1\{ \text{ONE} \} | 2\{ \text{TWO} \} | 3\{ \text{THREE} \};$
GR

FIG.2
(Prior art)

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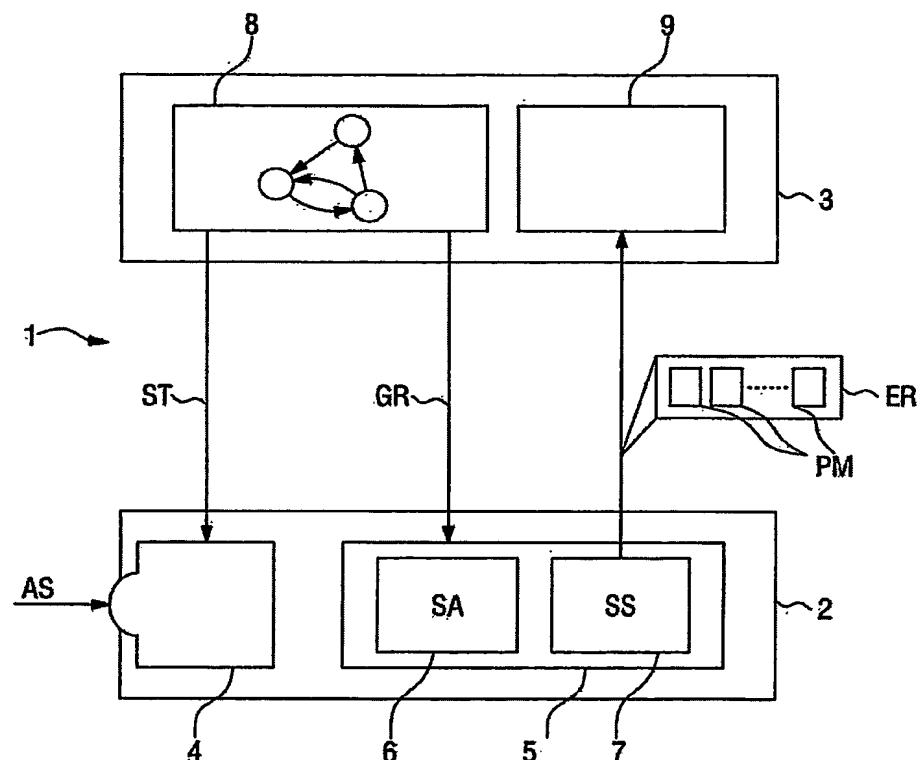


FIG.3

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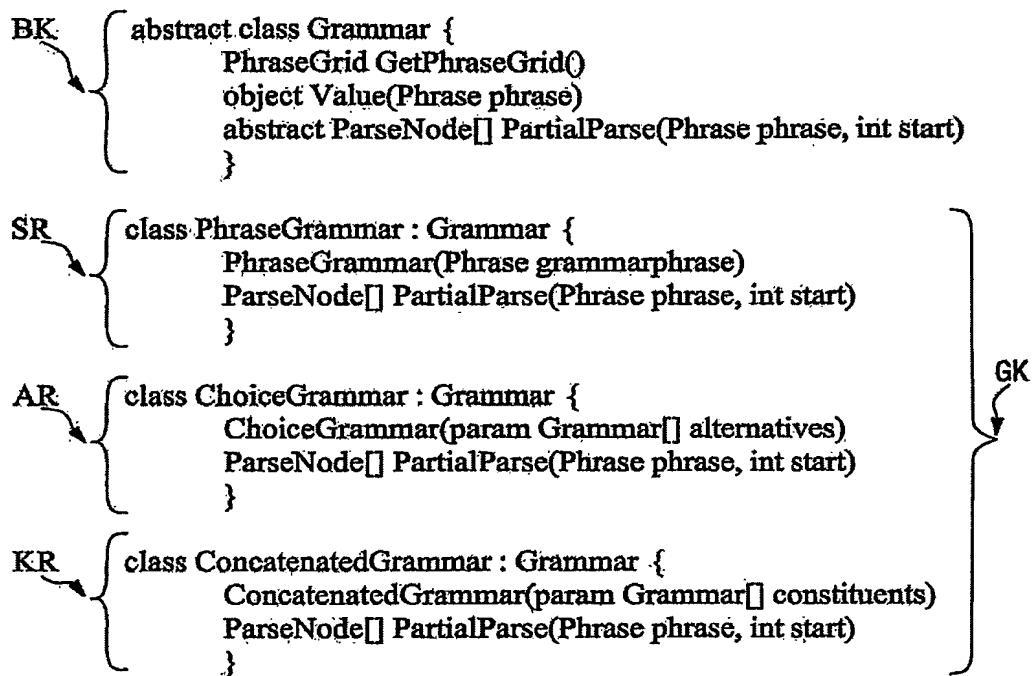


FIG.4a

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```
AR-> Grammar command = new ChoiceGrammar(play, stop, goto)
AR-> Grammar play = new ChoiceGrammar(
    new PhraseGrammar("play"),
    new PhraseGrammar("go"),
    new PhraseGrammar("start")
)
AR-> Grammar stop = new ChoiceGrammar(
    new PhraseGrammar("stop"),
    new PhraseGrammar("halt"),
    new PhraseGrammar("quit running")
)
AR-> Grammar lineno = new ChoiceGrammar(
    new PhraseGrammar("1"),
    new PhraseGrammar("2"),
    new PhraseGrammar("3")
)
KR-> Grammar goto = new ConcatenatedGrammar(
    new PhraseGrammar("go to line"),
    lineno
)
```



GO

FIG.4b

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```
KR → Grammar multiplication = new ConcatenatedGrammar(  
    new NumberGrammar(1,9),  
    new PhraseGrammar("times"),  
    new NumberGrammar(1,9)  
) } GO
```

```
SE → void OnSynthesize(SynthesizeEventArgs e) {  
    e.Value = e.Values[0] * e.Values[2]  
}
```

FIG.5

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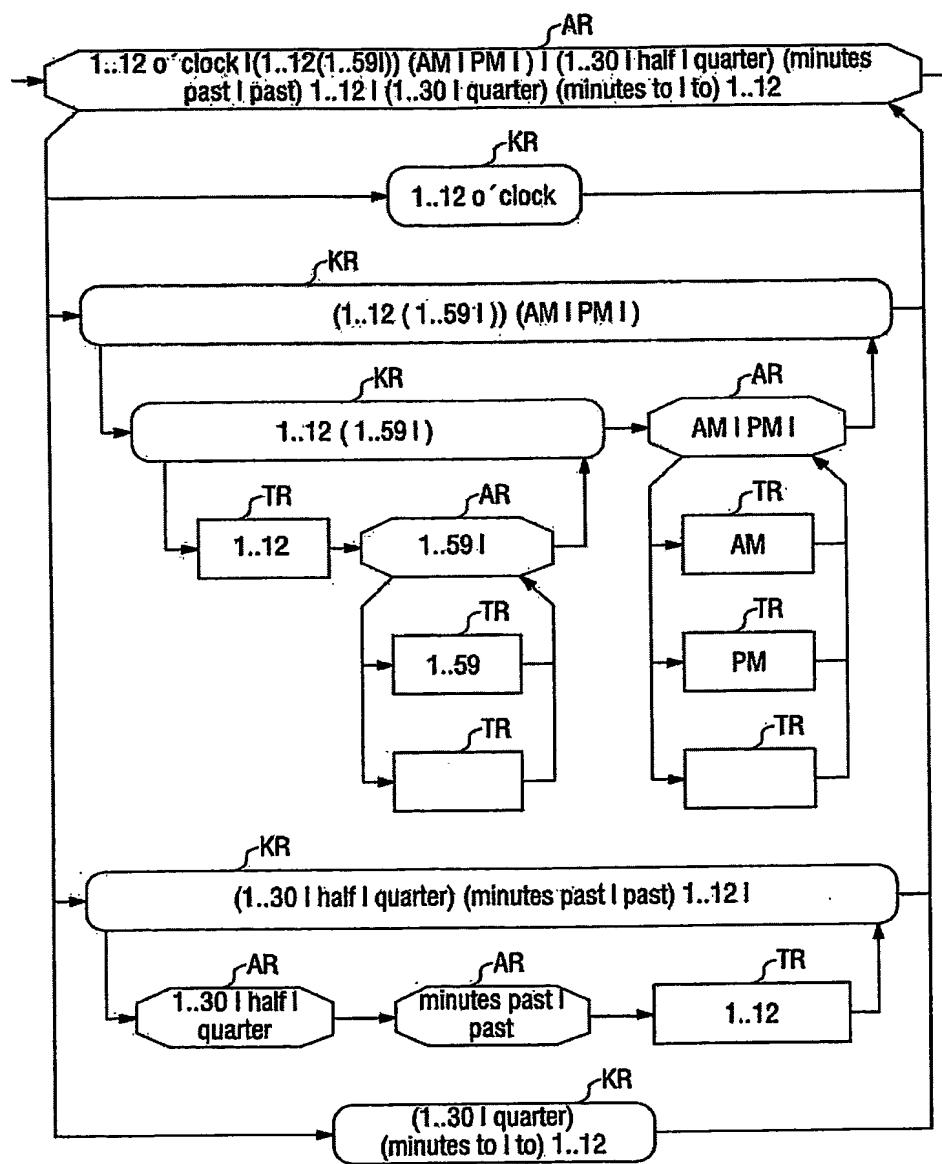


FIG.6